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Green Banking as a Progressive Format of Financial Activity in Transition to Sustainable Economy

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Abstract. The article is devoted to the study of environmentally responsible (green) banking and the analysis "green" practice in Russia and abroad. The article develops the thesis about the importance of greening of financial decisions of commercial banks to create a sustainable economy. Based on the opinions of different researchers, the author's decision that environmentally responsible banking is a strategically important format of bank activity, which guarantees the synergy of four effects: increasing the economic efficiency of banks, forming the social image of banks, reducing the harmful effects on the ecosystem and generating future social benefits. The authors systematized internal and external elements of green banking. Internal elements are remote methods of customer service, the introduction of paperless workflow and "smart" equipment. External elements include green lending, issue of green securities, affinity card issuance and ecology charity. Comparative analysis in the BRICS countries showed that the most progressive "green" practice is implemented in Brazil and China. India and Russia took a backward position. It is established that the Bank of Russia, unlike regulators of other countries, does not play the role of "driver" of ecologically responsible activity of commercial banks.

1. Introduction

The transition to environmentally sustainable economic development requires increased investments in low-carbon production, energy efficiency and infrastructure upgrading. In order to invest in environmentally significant projects, especially in energy efficiency and renewable energy, it is necessary to set up eco-responsible banking system.

The relevance of the article is determined by the need to mobilize financial resources to solve global and local environmental problems. Environmental challenges have directed modern researchers to find ways of economic development: now is discussing the transition from a model of "uncontrolled, rash" growth to a model of "green" growth based on the principles of responsibility and stability. In this context, the banking sector is considered as a driver of realization of green projects.

The purpose of this research is to develop theoretical basis of environmentally responsible banking and study the green banking practice in Russia and abroad.

In order to achieve this goal, it is necessary to accomplish next tasks:

- explore the theoretical approaches of various researchers on the interpretation of environmentally responsible banking and formulate the author's point of view on this concept;
- systematize elements of environmental positioning of commercial banks;



- conduct a comparative analysis of "green" banking practices in countries with emerging markets (on the example of the BRICS);
- identify the main stop factors for the development of "green" financing in the Russian banking sector.

The object of the research is ecologically responsible financial operations and instruments of bank activity. The subject of the research is the relations and processes in the bank sector carried out on principles of social and environmental responsibility. In this article, the thesis of the strategic importance of greening the financial decisions of commercial banks is developed.

2. The problem

In modern society, there is an acute question about the role of social and environmental responsibility of participants of financial relations. The problem is that financial organizations, which receive economic benefits from interaction with environment, do not consider their activities in the context of ecology improvement. In the long term, this does not create the conditions for human development. In this regard, the eco-responsible consciousness of modern financiers should be considered as an important component of the transition to a green economy.

3. Theoretical aspects of environmentally responsible banking

In the context of environmental turbulence, a responsible business models becomes great importance to minimize the negative consequences of "unsustainable", strategically negative for the planet models of production and consumption.

Responsible banking business as a value of the paradigm of sustainable development structures financial intermediation on economic and non-economic criteria, including social, ethical and environmental. Such researchers as S. Bahl [1], N. Biswas [2], S. Cornée and A. Szafarz [3], S. Garg [4], R.M. Lalon [5], V. Nath, N. Nayak and A. Goel [6], N. Kapoor [7], N. Singh and B. Singh [8] characterize the responsible banking in the context of "green" banking theory. It is based on a synergy of economic effect, environmental benefit and future social benefits. Supporters of the concept of "green" banking rightly believe that the greening of financial solutions allows not only to preserve the possibility of economic benefits, but also helps to create an effective market strategy for the solution of several environmental problems (climate change, deterioration of air and water, energy saving, reduction of biodiversity). For example, Raad Mozib Lalon considers that green banking is any form of banking, from which the country and the nation receives environmental benefits. He writes that traditional bank becomes a "green" bank by directing its operations to improve the environment and including strategies that will ensure economic development and environmental impact [5].

The authors L. San-Jose, L. Retolaza and Gutierrez-Goiria [9], E. Paulet, M. Parnaudeau and F. Relano [10], V.S. Chew, L.H. Tan and S.R. Hamid [11] reveal in their works the theme of "ethical" banking. They imply that this is concept of banking, based on principles of economic efficiency, ecological responsibility, social inclusion and ethics. An example of this is Islamic banking, based on environmental responsibility, religious and moral guidelines.

In the article of K. Mettenheim and O. Butzbach [12] presented "alternative" banking as a new format of activity, which involves obtaining economic benefits with achieving social and environmental benefits.

Among foreign publications, there is a common point of view that banking sector is the general conductor of green innovation in the financial sector. It is considered, environmentally responsible banking provides the foundation for a good and happy life for future generations. In work [8], it is noted that "green" banking is a concept of proactive and smart thinking of bank managers who understand that today's actions to protect the environment create the conditions of living for future generations. N. Singh and B. Singh also indicated that the survival of banking industry is inversely proportional to the level of global warming.

A similar opinion is expressed in the paper of B.R. Bhardwaj and A. Malhotra [13]: "green" banking is an innovative strategy, based on the introduction of technologies, processes and products that

lead to a significant reduction of the carbon footprint, as well as contribute to the sustainable development of the banking business. In the collective work on the study of "green" financial technologies in South Asia [14], it is argued that the "green" imperative transforms the extensive form of motivation of the three "P": "Profit, Profit, Profit" into a responsible other three "P": "Profit, People, Planet".

In publications of Russian researchers, the concept of environmental (green) banking is considering within the framework of "green" finance. Thus, on the opinion of Academic B. Porfirjev, "green" finance includes a set of financial products and services, the development, production and use of which is oriented on reducing environmental and climate risks [15]. In the monograph edited by B.B. Rubtsov it is noted that "the term "green finance" can be determined as a wide range of ways to finance technological processes, projects and companies related to environmental protection, and financial products (instruments) and services with an environmental component" [16]. In papers of V.V. Arkhipova [17], I.A. Yakovlev, L.S. Kabir, S.I. Nikulina and I.D. Rakov [18] also suggest that further "green" growth depends significantly on the willingness of financial intermediaries (banks) to invest in eco-friendly projects.

That is, in the Russian scientific society there is an understanding of the importance of banking system in the transition to environmentally sustainable economy. Despite the fact that there is no holistic view of "green" banking as a business-trend of the modern economy, researchers notice the interdependence between "greening" of financial decisions of commercial banks and reducing the anthropogenic stress on the ecosystem.

Also, scientists actualize the need for the formation of environmental culture of business. In the context of the noospheric paradigm of development, author A.I. Subetto writes: "In the conditions of ecological cataclysms a new imperative of survival in the XXI century was born. This transition to sustainable development in the form of managed socio-natural evolution on the basis of social intelligence" [19].

Thus, in our opinion, eco-responsible banking is a strategically important concept of bank activity, which guarantees the synergy of four effects: increasing the economic efficiency of banks, forming the social image of banks, reducing the harmful effects on the ecosystem and generating future social benefits. "Green" banking can be considered as an untraditional business model, focused not only on profit, but also to achieve the "benefits of the future" in the forecasts of environmental improvement and social indicators (fertility, life expectancy and others).

Further, based on the results of study [20], we systematized elements (characteristics) of ecological positioning of modern banks (Table 1).

Table 1. Elements of "green" banking.

Internal elements	External elements
1. Resource-saving equipment and separate garbage collection.	1. "Green" lending and investment.
2. Paperless document flow.	2. Operations on "green" securities market.
3. Remote forms of customer service.	3. "Green" banking products for citizens (payments, affinity cards, deposits).
4. Creation of "green" offices.	4. Eco-oriented sponsorship or charity.
5. Transportation of employees by corporate transport.	5. "Green" crowdfunding.

Internal elements of "green" positioning describe the internal processes that contribute to resource saving and reduce the harmful impact on the environment. Thus, an increasing number of modern banks acquire equipment that reduces energy and water consumption. Introduction of remote maintenance and electronic document management saves paper and supplies. Using remote services, customers save time, fuel, protect atmosphere and road surface. We suppose that further development of digi-

tal technologies and telecommunications will lead to the evolution of contactless services with a steady decrease in the resource intensity of banking operations.

External "green" elements characterize the communicative sphere of bank's interactions with customers. These are various banking services or projects focused on progressive eco-technologies. Thus, bank lending is general direction of financing environmental projects (energy efficiency, resource saving, production of eco-friendly materials and food). An important step in the development of green lending is the adoption in 2003 by World's largest banks "Equator Principles" – a pact of social and environmental standards implemented in the lending and project financing.

4. Analysis of "green" banking practices

The principles of environmentally responsible business are being actively implemented in the banking practice of different countries. According to the International Finance Corporation, in 2006, the 100 credit and financial institutions took into account such principles in their strategies, and in 2016, their number increased to 1554. Of these, 45% are in the EU, 16% – in the US, 8% – in Australia, 5% – in Canada, 3.5% – in Brazil and South Africa, 2.5% – in Japan, 1.5% – in China, 18.5% – in other countries. In 2016, the share of "green" instruments in total bank loans was 12% in Japan and China, 14% in the US, 20% in the UK, and 30 % in India [17]. It is noteworthy that the indicators of China and India are approximately equal to the values of developed countries. It can be assumed that in the future, countries with emerging markets, such as China, Brazil and India, which are part of the BRICS group, will be able to strengthen their positions in responsible financing.

The BRICS group is a system of growing economies characterized by production growth and high level of environmental pollution. In these large countries, measures are needed to reduce harm to the environment. This requires a policy of green growth.

The world's largest database of countries Numbeo has published statistics on the level of environmental pollution in different countries (Pollution Index for Country) [21]. Experts assessed how each country spoils the environment of the entire Planet. Fig. 1 presents a map of the country's degrees of environmental pollution. "Orange" and "yellow" are countries with a high Pollution Index (the countries of BRICS).

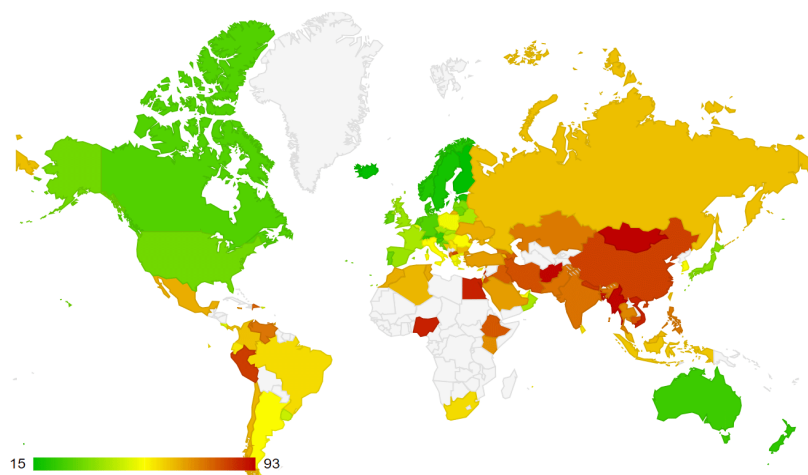


Figure 1. Distribution of countries by degree of environmental pollution [21].

Next, we analyze the environmentally responsible banking in Brazil, Russia, India, and China. The authors did not analyze the South African Republic, which is member of the BRICS group, as this state has the lowest rates of GDP and population growth. It is possible to make an assumption about the less significant scale of pollution in comparison with other countries of the group.

The World Wildlife Fund (WWF) in 2015 has presented a summary report about financial markets of the BRICS countries in the context of sustainable development [22]. Experts of WWF have chosen five main characteristics of environmentally responsible banking activity:

A – Adoption of environmental and social criteria in banking;

B – Existence in banking practice the criteria of "green" investments;

C – Assessment of environmental and social risks in the credit process;

D – Information about environmental and social activities in the official reports of commercial banks;

E – Existence of regulatory environmental and social norms in banking legislation.

Factors were estimated by severity: high, medium, low. We have made summary graphical interpretation of the factors (see Fig. 2).

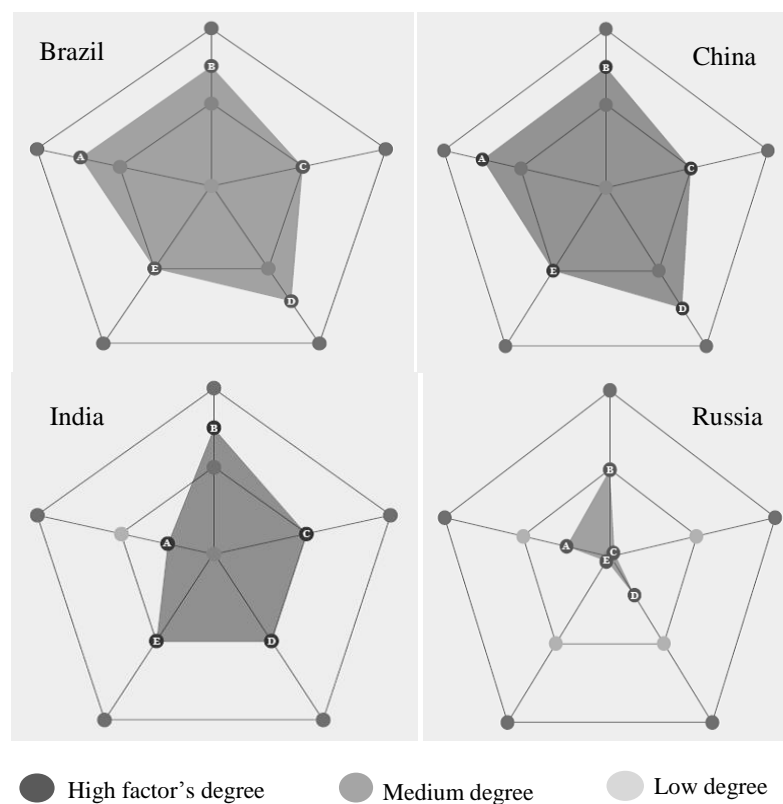


Figure 2. Comparative characteristics of "green" banking practice in BRICS.

As seen in Fig. 2, Brazil and China are more progressive in the development of environmentally responsible banking (graphic profiles of these countries are identical). In Brazil, eight major banks have joined the "Equator Principles", implementing environmental and social criteria in investment activities. In China, seven largest banks comply with the "Equator Principles" (in a limited form) and implement sustainable development policies. In India, no one bank has joined the "Equator Principles". And only three largest banks are guided by environmental and social criteria in their activities and publish relevant reports. Russia has the worst indicators, as all factors are insignificant (factors C and E are estimated at zero level). No one of Russian banks joined the "Equator Principles".

Unfortunately, Russian practice of implementing the principles of responsible financing lags behind other countries. The WWF report refers that environmental principles are not a priority for most Russian banks and do not use in the loan approval process. The Bank of Russia's policy is not aimed at promoting the greening of the banking system and the development of "green" financial instruments.

In Russian regulatory legal documents regulating banking, there are no environmentally oriented definitions, requirements, or regulatory treatments.

The principles of sustainable development for banking system are implementing in practice by regulatory authorities of some developing country: Mongolia, Bangladesh, Nigeria, Kenya, Peru, Vietnam, Indonesia, Colombia and Morocco [17]. Moreover, international cooperation becomes more active. For example, in 2012, the Sustainable Banking Network was established as non-formal organization that united banking regulators and banking associations interested in the development of environmentally sustainable practices and regulations. In 2015, the Green Infrastructure Investment Coalition was founded to combine efforts of governments, international organizations and banks in the financing of green projects.

Despite the retardation of Russian banking sector from the "green" practice of other countries, there are some achievements in this sphere. Internal elements of "green" positioning are implemented in almost all Russian banks: resource-saving equipment, paperless document flow, remote forms of customer services (Internet banking, mobile banking applications).

External elements of "green" banking are mainly presented in the form of lending of environmental projects, issue of plastic affinity cards, welfare activity.

Environmental and social principles of lending are being implemented in large banks: Sberbank, VTB, Vnesheconombank, Alfa-Bank. These are voluntary initiatives. For example, in 2013 Vnesheconombank developed its own Policy of responsible financing, and in 2014 began working on the methodology of environmental and social assessment of investment projects. Sberbank started to provide "green" loans in 2008 to companies for the modernization of production facilities to reduce harmful emissions, increase energy efficiency, production of eco-friendly building materials, recycling and production of healthy food.

Some banks lend "green" projects through financial cooperation with international financial and credit organizations. For example, Promsvyazbank and Rosbank are holders of credit lines of European Bank for Reconstruction and Development. The funds received are used to provide credit lines for environmental and technical support to small and medium-sized enterprises. Transcapital Bank, Loco Bank, Absolute Bank, Prime Finance are the beneficiaries of long-term credit lines from International Finance Corporation. These banks lend energy efficient projects [20].

Another channel of environmental projects supporting is the issue of affinity cards. Paying with such card, a holder becomes a member of charity program (bank will transfer a certain percentage of the purchase amount to the charity fund). The issuers of such cards are Alfa-Bank and Gazprombank (programs for the conservation of rare species of leopards), Rosselkhozbank (program for the conservation of the Amur tiger), Pochta bank (program "Green world"), Tinkoff bank (program "Preservation of wild animals").

Unlike other countries, there is no practice of eco-crowdfunding and "green" bond issuance in Russia. Intentions on the issue were presented in the official reports of Sberbank, VTB, Vnesheconombank in the past three years. At the state level, Government and the Bank of Russia are discussing the development of environmentally oriented financial instruments.

Currently, green and climate bonds are growing segment of the global financial market. In 2013-2017, the volume of such bonds increased from \$ 11 billion to \$ 160 billion. At the end of the second quarter of 2018, it amounted to \$ 389 billion. According to analysts, the share of developing countries in total emissions is expected to increase from 19% to 28% in the next 3-5 years. The largest issuers of such bonds are the companies and banks of China, USA, France, Canada, and Great Britain. The main areas of investment are energy and transport [23].

Finally, we have identified the main stop factors for the development of "green" financing in the Russian banking sector. First, Russian banks keep the rigid paradigm of "corporate egocentrism": the purpose of business is profit maximization. Most banks are not ready to incorporate environmental and social principles into their strategic plans because the benefits are not obvious. Second, insufficient economic justification and high risks of environmental projects, lack of liquid collateral. High costs and long payback period in most cases become stop factors for lending "green" projects. Third, short-

term resource base of banks does not allow to realize long ecological infrastructure projects. One of the factors is the introduction of Western sanctions in the financial sector, which cut off long liabilities of banks. Fourth, there are no tax incentives and regulatory documents of enshrine social and environmental responsibility as a principle of activity. This characterizes the passive position of the Bank of Russia in stimulating "green" investments.

5. Research results

Summarizing the study, the following important points can be identified.

1. There is a growing research interest in the subject of eco-oriented banking. This demonstrates the importance of greening financial decisions. Money is beginning to play the role of a provider of green transformation and formation of a sustainable economy.

2. The number of publications of authors from Asian countries is increasing. This fact indicates that environmentally responsible consciousness is being developed in the polluting countries. There are few scientific papers on this topic in Russia.

3. The author's opinion is that green banking as a progressive model allows achieve four effects: increasing the economic efficiency of banks (1); forming the social image of banks (2); reducing the harmful effects on the ecosystem (3) and generating future social benefits (4). In the future, this will contribute to the formation of a sustainable economy.

4. Comparative analysis in the BRICS countries showed that the most progressive green practice is observed in Brazil and China. India and Russia show a significant lag. In Russia, only a few large banks implement the environmental and social criteria and carry out responsible financing. The Bank of Russia does not introduce regulatory measures to encourage environmentally responsible financial activities of banks.

5. Russian banks implement internal and external elements of green positioning. Internal elements are remote methods of customer service, the introduction of paperless workflow and "smart" equipment. External elements include green lending, affinity card issuance, and ecology charity. "Green" securities are not issued in Russia, but initiatives to issue are found in the reports of some banks.

6. Conclusion

Environmentally responsible (green) banking is seen as un-traditional format of financial intermediation, which reduces the harmful effects on the ecosystem. Environmental and social principles are already part of the financial strategies of many banks in the world. The Russian banking sector has a progressive practice, but there is no systemic understanding of the importance of environmental initiatives. The main reason is that banks are not motivated to carry out responsible financing.

Further theoretical development of the green banking concept is seen in the elaboration of methodological aspects of environmental risk assessment and approaches to the systematization of environmental responsibility criteria. Practical progress is thought in the development of new green financial products and instruments, implementation of responsible financing, official green reporting.

The Bank of Russia should pay attention to promoting green banking practices. It is necessary to create a regulatory system in which banks would benefit "to be green". For eco-oriented banks, it would be possible to reduce reserve requirements or capital adequacy ratios. Monetary authorities ought to understand that environmental culture must be an attribute of the financial activity in conditions of global challenges.

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